

REMARKS

This Amendment is fully responsive to the non-final Office Action dated September 13, 2010, issued in connection with the above-identified application. A request for a three-month extension of time is included. Claims 1 and 3-20 are pending in the present application. With this Amendment, claims 1, 4 and 15-20 are amended; and claim 3 is cancelled without prejudice or disclaimer to the subject matter therein. Favorable reconsideration is respectfully requested.

In Office Action, claims 15 and 16 have been rejected under 35 U.S.C. § 101 for being directed to non-statutory subject matter. The Examiner alleges that the specification in ¶[0099] states that the invention may be characterized as software, which is non-statutory subject matter. The Examiner also alleges that the claims recite various “units” which can be interpreted as software.

The Applicants have amended independent claims 15 and 16 to remove the term “unit” and to clarify the structural elements of the transmitting and receiving devices. Independent claims 15 and 16 are now believed to be clearly directed to statutory subject matter. Additionally, the amendments to independent claims 15 and 16 are fully supported by the Applicants’ disclosure. Withdrawal of the rejection to claims 15 and 16 under 35 U.S.C. § 101 is respectfully requested.

In the Office Action, claims 1, 8, 9, 13, 15, 16, 17, 19 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko (European Publication No. 1134933, hereafter “Tomohiko”) in view of Sharony (U.S. Publication No. 2004/0057459, hereafter “Sharony”) and Kobayashi (U.S. Publication No. 2004/0158872, hereafter “Kobayashi”).

The Applicants have amended independent claims 1 and 15-17, 19 and 20 to more clearly distinguish the present invention from the cited prior art. For example, independent claim 1 (as amended) recites *inter alia* the following features:

“[a] communication system, ...

wherein said first communication device includes:...

a conversion unit operable to convert the received Multicast frame into a Unicast frame addressed to said second communication device...

said conversion unit is operable to convert the IP Multicast frame into the Unicast frame in which a Multicast IP address included in the IP Multicast frame is set as an

address at a Network Layer and a MAC address of said second communication device is set as an address at a Data Link Layer.” (Emphasis added).

The features emphasized above in independent claim 1 are similarly recited in independent claims 15-17, 19 and 20 (as amended). Additionally, the features emphasized above in independent claim 1 (and similarly recited in independent claims 15-17, 19 and 20) are fully supported by the Applicants’ disclosure (see e.g., ¶[0106]; and Figs. 15 and 16).

The present invention (as recited from independent claims 1, 15-17, 19 and 20) is distinguishable from the cited prior art in that a communication system (or method) includes a first communication device (or step) that converts the received Multicast frame into a Unicast frame in which a Multicast IP address included in the IP Multicast frame is set as an address at a Network Layer, and a MAC address of a second communication device is set as an address at a Data Link Layer.

With the present invention (as recited in independent claims 1, 15-17, 19 and 20), although the conversion unit or converter (or step) converts an IP Multicast frame into a Unicast frame by a mechanism of the Data Link Layer, an address at the Network Layer regarding the converted Unicast frame is set to be the same as an address at the Network Layer for an IP Multicast frame that has not been converted (i.e., the same as the Multicast IP address). Thus, at the Network Layer, it is not necessary to convert the frames to Unicast frames.

In the Office Action, although the Examiner relies on the combination of Tomohiko, Sharony and Kobayashi for disclosing or suggesting all the features on independent claims 1, 15-17, 19 and 20, the Examiner relies specifically on Tomohiko for disclosing or suggesting all the features of the conversion unit, converter or converting step recited respectively in independent claims 1, 15-17, 19 and 20. In particular, the Examiner relies on ¶[0045]-¶[0049] of Tomohiko.

However, the Applicants assert that Tomohiko fails to disclose or suggest all the features of the conversion unit, converter or converting step recited respectively in independent claims 1, 15-17, 19 and 20, as amended.

For example, independent claim 1 (as amended) recites the following:

“said conversion unit is operable to convert the IP Multicast frame into the Unicast frame in which a Multicast IP address included in the IP Multicast frame is set as an address at a Network Layer and a MAC address of said second communication device is set as an address at a Data Link Layer.”

On the other hand, the most relevant portion of Tomohiko in ¶[0045]-¶[0049] are discussed below. Tomohiko in ¶[0047] discloses a Unicast packet that is composed of a header section and a data section, wherein the header section includes an IP header of a destination address and a source address, and a UDP header of a destination port and a source port.

Tomohiko in ¶[0048] discloses that a Unicast packet is transmitted to a packet transfer apparatus and the packet transfer apparatus determines whether the Unicast packet is a packet for a Multicast packet. The packet transfer apparatus searches a data transfer table and retrieves a group address, the destination port, the source address and the source port of the original Multicast packet. And, Tomohiko in ¶[0049] discloses that the packet transfer apparatus transmits and reproduces the original Multicast packet.

Based on the above discussion of Tomohiko, the references discloses that an address at the Network Layer regarding a converted Unicast frame is a Unicast IP address, not a Multicast IP address. Additionally, Tomohiko discloses a Unicast frame that includes two IP headers, wherein one IP header is used as an address at the Network Layer and the other IP header is a header of an original packet and is not used as an address for transferring a packet (e.g., a Unicast frame). Therefore, in Tomohiko, the address at the Network Layer regarding the Unicast frame is a clearly a Unicast IP address.

Conversely, with the present invention (as recited from independent claims 1, 15-17, 19 and 20) a received Multicast frame is converted into a Unicast frame in which a Multicast IP address included in the IP Multicast frame is set as an address at a Network Layer, and a MAC address of a second communication device is set as an address at a Data Link Layer.

With the present invention (as recited from independent claims 1, 15-17, 19 and 20), although the conversion unit or converter (or step) converts an IP Multicast frame into a Unicast frame by a mechanism of the Data Link Layer, an address at the Network Layer regarding the converted Unicast frame is set to be the same as an address at the Network Layer for an IP Multicast frame that has not been converted (i.e., the same as the Multicast IP address). Thus, at the Network layer, it is not necessarily to convert the frames Unicast frames.

Tomohiko fails to disclose or suggest the above features and advantages of the present invention (as recited in independent claims 1, 15-17, 19 and 20) noted above. Also, as noted above, Sharony and Kobayashi are not relied on for disclosing or suggesting the features of the claimed conversion unit, converter or converting step recited respectively in independent claims

1, 15-17, 19 and 20. Accordingly, no combination of Tomohiko, Sharony and Kobayashi would result in, or otherwise render obvious, independent claims 1, 15-17, 19 and 20 (as amended). Likewise, no combination of Tomohiko, Sharony and Kobayashi would result in, or otherwise render obvious, claims 8, 9 and 13 at least by virtue of their dependencies (directly or indirectly) from independent claim 1.

In the Office Action, claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony and Kobayashi, and further in view of Tomohiko-US (U.S. Publication No. 2001/0018714); claims 5 and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony and Kobayashi, and further in view of Zisapel (U.S. Publication No. 2003/0195984, hereafter “Zisapel”); and claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony, Kobayashi, and Zisapel, and further in view of Alexander (U.S. Patent No. 7,411,901, hereafter “Alexander”).

Claim 3 have been cancelled thereby rendering the above rejection to that claim moot. Additionally, claims 5, 6 and 10 depend (directly or indirectly) from independent claim 1. As noted above, Tomohiko, Sharony and Kobayashi fail to disclose or suggest all the features recited in independent claim 1 (as amended). Moreover, Tomohik-US, Zisapel and Alexander fail to overcome the deficiencies noted above in Tomohiko, Sharony and Kobayashi. Accordingly, no combination of Tomohiko, Sharony and Kobayashi with Tomohik-US, Zisapel or Alexander would result in, or otherwise render obvious, claims 5, 6 and 10 at least by virtue of their dependencies from independent claim 1.

Additionally, in Office Action, claim 7 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony, Kobayashi, Zisapel, and Alexander, and further in view of Lipp (U.S. Patent No. 6,751,219, hereafter “Lipp”); claims 11 and 12 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony Kobayashi, Zisapel, and further in view of Lipp and Alexander; claim 14 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko, Sharony and Kobayashi, and further in view of Wesley (U.S. Patent No. 6,076,114); and claim 18 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Tomohiko in view Wakai (U.S. Patent No. 5,973,722), Kobayashi and Sharony.

Claims 7, 11, 12 and 14 depend from independent claim 1. As noted above, Tomohiko, Sharony and Kobayashi fail to disclose or suggest all the features recited in independent claim 1

(as amended). Additionally, Zisapel, Alexander, Lipp and Wesley fail to overcome the deficiencies noted above in Tomohiko, Sharony and Kobayashi. Accordingly, no combination of Tomohiko, Sharony and Kobayashi with Zisapel, Alexander, Lipp or Wesley would result in, or otherwise render obvious, claims 7, 11, 12 and 14 at least by virtue of their dependencies from independent claim 1.

Finally, independent claim 18 has been amended to include similar features to those discussed above with reference to independent claim 1. That is, independent claim 18 (as amended) recites *inter alia* that:

“said conversion unit is operable to convert the IP Multicast frame into the Unicast frame in which a Multicast IP address included in the IP Multicast frame is set as an address at a Network Layer and a MAC address of said second communication device is set as an address at a Data Link Layer.” (Emphasis added).

Accordingly, independent claim 18 (as amended) is distinguished from Tomohiko, Sharony and Kobayashi for the same reasons noted above with reference to independent claim 1. Moreover, Wakai fails to overcome the deficiencies noted above in Tomohiko, Sharony and Kobayashi. Therefore, no combination of Tomohiko, Sharony, Kobayashi and Wakai would result in, or otherwise render obvious, independent claim 18 (as amended).

In light of the above, the Applicants submit that all the claims pending in the present application are patentable over the prior art of record. Accordingly, the Applicants respectfully request that the Examiner withdraw the rejections in the Office Action, and pass the present application to issue.

The Examiner is invited to contact the undersigned attorney by telephone to resolve any issues remaining in the application.

Respectfully submitted,

Masaaki HIGASHIDA et al.

/Mark D. Pratt/

By 2011.03.08 13:34:11 -05'00'

Mark D. Pratt

Registration No. 45,794

Attorney for Applicants

MDP/mac
Washington, D.C. 20005-1503
Telephone (202) 721-8200
Facsimile (202) 721-8250
March 8, 2011